

S/064/63/000/002/002/005  
B117/B186

Study of the direct...

very high and the dependence of the aluminum conversion on the duration of the process is almost linear like the curves of hydrogen consumption. The further S-shaped course of the curves is characteristic of successive reactions. The total rate of the process decreases as a result of the decreasing rate of hydration. With chemically activated aluminum the synthesis sets in spontaneously, but it proceeds more slowly. This is probably due to a partial removal of the inhibiting oxide layer during the activation of Al. If the powder granulated in the inert gas current is used the synthesis is preceded by an induction period. The duration of this depends on the temperature of the process, being 3 hr at 110°C and 0.5 hr at 150°C. A comparison of the linear sections of the kinetic curves obtained showed that the amount of aluminum conversion in the initial state of the synthesis ( $\sim 3$  hr) can be used as criterion for estimating the reactive power of Al. Aluminum conversion depends on the synthesis temperature. At higher temperatures (150°C), its effectiveness is about 1.5 to 2 times higher than at 110°C. When mechanically and chemically activated aluminum is used the rate of the synthesis is determined by processes of mass transfer. The reaction proceeds in the diffusion range. The activation energy is 3.6 to 5.7 kcal/mole. In the case of the powder granulated in inert gas the rate of the synthesis is determined by one of the stages of direct synthesis.

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Study of the direct...

S/064/63/000/002/002/005  
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The activation energy attains 14.5 kcal/mol. There are 7 figures and 1 table.

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ANTIPIN, L.M.; ZHIGACH, A.F.; LARIKOV, Ye.I., POPOV, A.F.

Direct single-stage synthesis of triisobutylaluminum. Khim.  
prom. no.2:97-100 F '63. (MIRA 16:7)

(Aluminum organic compounds)

LARIKOV, Ye. I.; ZHIGACH, A. F.; POPOV, A. F.; KULIKOVSKAYA, T. N.;  
VLADYTSKAYA, N. V.

Thermal decomposition of aluminum alkyls. Khim prom no. 3:  
171-174 Mr '64. (MIRA 17:5)

SAKHAROVSKAYA, G.B.; KORNEYEV, N.N.; POPOV, A.F.; LARIKOV, Ye.I.; ZHIGACH, A.F.

Reaction of trialkylaluminum with water. Zhur. ob. khim. 34 no.10:  
3435-3438 O '64. (MIRA 17:11)

L 51876-65 EWT(m)/EPF(c)/EPR/ENP(j)/I/EWA(c) Pc-4/Pr-4/Ps-4 RPL . WW/RM

ACCESSION NR: AP5010548

UR/0064/65/000/004/0014/0015  
661.786.21:547.356.2:313.4-125:66.091AUTHORS: Antipin, L. M.; Zhigach, A. F.; Larikov, Ye. I.; Popov, A. F. 34TITLE: Direct synthesis of triisobutylaluminum 7SOURCE: Khimicheskaya promyshlennost', no. 4, 1965, 14-15

TOPIC TAGS: organo metallic compound, hydration, alkylation, organic synthesis

ABSTRACT: The conversion of aluminum in triisobutylaluminum is complex, slowing down after 2-3 hours treatment because of oxide coating. This conversion of aluminum activated by different methods was examined. No induction period, characteristic of single-stage synthesis, was observed in any of the experiments. The rate of hydration increased with rise in temperature. At 150C the aluminum had reacted completely in 3-5 hours. Further heating at that temperature led to decline in content of aluminum bound in the reaction products and to an increase of aluminum in isobutane. This is due to thermal decomposition of diisobutylaluminum hydride. Such decomposition may be suppressed by adding isobutylene to the reacting mass. Experiments show that the conversion of aluminum in diisobutylaluminum hydride takes place much more rapidly than the single-stage synthesis

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L 51876-65

ACCESSION NR: AP5010548

of triisobutylaluminum. Industrially, then, triisobutylaluminum should be synthesized in two stages or, if in one stage, in a cascade of reactors. When the latter technique is employed, an excess of diisobutylaluminum hydride should be maintained in the first reactor, and an excess of isobutylene should be maintained in the last. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: CC, CC

NO REF SOV: 001

OTHER: 001

*llc*  
Card 2/2



L 52106-65 EPF(c)/EPR/EWT(f)/EWA(c)/EWT(m) Pc-h/Pr-h/PA-h RPL WW/RM

ACCESSION NR: AP5015237

UR/0286/65/000/009/0021/0021

AUTHORS: Sakharovskaya, G. B.; Korneyev, N. N.; Larikov, Ye. I.; Zhigach, A. F.; Pedotova, R. I.

TITLE: A method for obtaining alkylalumoxanes Class 12, No. 170493

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 21

TOPIC TAGS: alkylalumoxane, aluminium alkyl, alkyl ester

ABSTRACT: This Author Certificate presents a method for obtaining alkylalumoxanes by interacting aluminum alkyls with water. To simplify the process, the reaction is conducted in the presence of simple alkyl esters.

ASSOCIATION: none

SUBMITTED: 24Feb64

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

Card 1/1 prB



L 65100-65 EWP(a)/EWP(m)/EWP(t)/EWP(x)/EWP(z)/EWP(b) IJP(c) JD  
 UR/0285/65/000/014/0023/0023  
 ACCESSION NR: AP5021971 669.71 : 547.419.6

AUTHOR: Zhigach, A. F.; <sup>44,55</sup>Popov, A. F.; <sup>44,55</sup>Sil'vestrov, D. N.; <sup>44,55</sup>Aronov, M. I.; Larikov, Ye. I.; <sup>44,55</sup>Antipin, L. M.; <sup>44,55</sup>Nazarov, S. Ye.; <sup>44,55</sup>Korneyev, N. N.

TITLE: A method for activating aluminum. Class 12, No. 172780

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 23

TOPIC TAGS: aluminum, powder metal production, powder metallurgy, aluminum powder

ABSTRACT: This Author's Certificate introduces a method for activating aluminum by pulverizing it in a cavitation mill with a shielded electric drive. The method is simplified by grinding the aluminum for 3-10 hours until the particle size is 0.5-1  $\mu$ .

ASSOCIATION: none

SUBMITTED: 02Feb62

NO REF SOV: 000

ENCL: 00

SUB CODE: MM

OTHER: 000

<sup>44,55</sup>  
 Card 1/1

VOL'PIN, M.Ye.; ILATOVSKAYA, M.A.; LARIKOV, Ye.I.; KHIDEKEL', M.L.;  
SHVETSOV, Yu.A.; SHUR, V.B.

Nitrogen fixation on hydrogen-activating transition metal  
complexes. Dokl. AN SSSR 164 no.2:331-333 S '65. (MIRA 18:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i  
Institut khimicheskoy fiziki AN SSSR. Submitted February  
15, 1965.

L 02995-67 EWT(m)/EWP(j)/EWP(t)/ETI IJP(c) JD/WW/JW/RM/JH

ACC NR: AR6033145

SOURCE CODE: UR/0064/66/000/010/0020/0022

AUTHOR: Bezukh, Ye. P.; Zhigach, A. F.; Larikov, Ye. I.; Popov, A. F.

ORG: none

TITLE: Synthesis of methylaluminum sesquichloride and trimethylaluminum

SOURCE: Khimicheskaya promyshlennost', no. 10, 1966, 740-742

TOPIC TAGS: methylaluminum sesquioxide, trimethylaluminum, ~~one-step process~~, CHEMICAL synthesis, propellant, *ALUMINUM COMPOUND, CHLORIDE*

ABSTRACT: Direct one-step preparative methods for methylaluminum sesquichloride (a mixture of  $\text{Al}(\text{CH}_3)_2\text{Cl}$  and  $\text{AlCH}_3\text{Cl}_2$ ) and trimethylaluminum are described. Methylaluminum sesquichloride was synthesized in a sealed reactor (Popov, A. F. and N. N. Korneyev, Author Certificate 168691. 1962, Byul. izobr, no. 5, 1965) from iodine-activated PA-4 aluminum powder or ASD-T aluminum powder and methyl chloride in cyclohexane solution at a 2/3/4.65 constant initial molar ratio. The optimum preparative conditions were determined (see Table 1) to be 50—70C for 6—7 hr. The process was tested on a previously developed continuous reactor for ethylaluminum sesquioxide (Zhigach, A. F., A. F. Popov, and Ye. P. Bezukh Byulleten' tekhn.-ekonom. informatsii GOSINTI, v. 2, 1962, p. 39). Trimethylaluminum was synthesized as follows:  
 $2\text{Al} + 3\text{Mg} + 6\text{CH}_3\text{Cl} \rightarrow 2\text{Al}(\text{CH}_3)_3 + 3\text{MgCl}_2$  from AST-D aluminum powder PMF-4 magnesium

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UDC: 547.256.2

L 02995-67

ACC NR: AR6033145

Table. 1. Effect of temperature and reaction time on the methylaluminum sesquioxide yield and reaction rate					
Reaction time	temperature, °C	Composition of the reaction products, %		Overall yield of reactions based on Al, %	Average reaction rate, mol/g-atom-hr)
		Al(CH <sub>3</sub> ) <sub>2</sub> Cl	AlCH <sub>2</sub> Cl <sub>2</sub>		
ASD-T aluminum powder					
20	30	51,2	48,7	15,9	0,004
20	50	54,2	45,8	66,5	0,0166
20	70	54,8	45,2	99,0	0,0247
20	90	54,8	45,1	99,1	0,0246
20	110	50,0	50,0	99,5	0,0248
20	130	46,0	54,0	95,0	0,0238
20	140	29,0	71,0	65,0	0,0163
20	150	10,0	90,0	45,0	0,0113
20	155	8,0	92,0	22,0	0,0055
2,5	55	48,0	52,0	39,2	0,078
5	55	48,9	51,1	76,5	0,066
6	55	50,4	49,6	97,3	0,081
10	55	50,0	50,0	99,0	0,046
15	55	50,5	49,5	98,1	0,033
20	55	49,8	50,2	98,0	0,024
PA-4 aluminum powder					
10	70	—	—	—	0
5	70	52,30	47,70	71,0	0,071
7	70	57,00	43,00	88,0	0,062
10	70	56,44	43,56	89,0	0,044

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ACC NR: AR6033145

and methyl chloride in cyclohexane solution at a constant 2/3/6/3 initial molar ratio. The optimum preparative conditions were determined (see Table 2) to be 120C for 5 hr.

Table 2. Effect of temperature on trimethylaluminum yield and reaction rate (Reaction time, 5 hr)				
Temperature, °C	Composition of the reaction products		Overall yield of reaction products based on Al, %	Average reaction rate, mol/(g-atom-hr)
	Al(CH <sub>3</sub> ) <sub>3</sub>	Al(CH <sub>3</sub> ) <sub>2</sub> Cl		
100	68,6	31,4	83,2	0,167
105	67,8	32,2	86,5	0,173
120	72,7	27,3	97,5	0,195
130	69,5	30,5	85,0	0,170
150	65,8	34,2	47,3	0,095

The drop of Al(CH<sub>3</sub>)<sub>3</sub> yield and reaction rate at higher temperatures was explained as its thermal decomposition catalyzed by titanium contaminating the aluminum. Orig. art. has: 2 tables.

SUB CODE: 07, 19/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 030/ ATD PRESS: 5099

Card 3/3 awm

ACC NR: AP6035823

(N)

SOURCE CODE: UR/0413/66/000/020/0030/0030

INVENTOR: Antipin, L. M.; Bondarevskaya, L. B.; Vladytskaya, N. V.; Danilov, S. I.;  
Zhigach, A. F.; Larikov, Ye. I.; Snyakin, A. P.

ORG: none

TITLE: Method of synthesizing lithium-aluminum hydride. Class 12, No. 186983

SOURCE: Izobreteniya, promyshlenyye obraztsy, tovarnyye znaki, no. 20, 1966, 30

TOPIC TAGS: lithium aluminum hydride, chemical synthesis

ABSTRACT: This Author Certificate introduces a method of synthesizing lithium-aluminum hydride by a reaction of sodium-aluminum hydride with lithium chloride in diethyl ether. To accelerate the process, it is carried out with additions of aluminum trialkyls. In a variant of the synthesizing process, aluminum-trialkyls are added in a quantity of 1-7%.

SUB CODE: 07 / SUBM DATE: 22Oct64/

Card 1/1

UDC: 661.968.546'621'34'11

LARIKOV, Yu.N., inzh.

Reduction of copper-oxide rectifiers. Avtom. telem. i svyaz' 2  
no.12:34 D '58. (MIRA 11:12)

1. Kzyl-Ordinskoy distantsei signalizatsii i svyazi Kazakhskoy dorogi.  
(Electric current rectifiers)



LUSKINA, B.M.; SYAVTSILLO, S.V.; LARIKOVA, G.G.

Determination of titanium and aluminum in triethylaluminum  
production wastes. Plast.massy no.3:16-18 '62. (MIRA 15:4)  
(Titanium--Analysis) (Aluminum--Analysis)

LUSKINA, B.M.; SYAVTSILLO, S.V.; BEREZOVSKAYA, B.Ye.; LARIKOVA, G.G.

Analysis of waste waters from the manufacture of organosilicon  
products. Plast.massy no.5:61-62 '63. (MIRA 16:6)  
(Sewage--Analysis) (Silicon organic compounds)

SHTIFMAN, L.M.; SYAVTSILLO, S.V.; LARIKOVA, G.G.

Determination of the content of trialkyl aluminum and dialkyl aluminum  
hydride by the electrometric method. Izv. vuzov. Khim. 13:  
325-330 '63. (MIRA 16:5)  
(Aluminum compounds) (Electrochemical analysis)

TERENT'YEV, A.P.; LARIKOVA, G.G.; BONDAREVSKAYA, Ye.A.

Use of aluminum lithium hydride in analysis. Report No.1:  
Determination of active hydrogen in organic substances in ethyl  
ether solutions. Zhur.anal.khim. 18 no.4:514-519 Ap '63.  
(MIRA 16:6)

1. M.V.Lomonosov Moscow State University.  
(Hydrogen—Analysis) (Organic compounds)  
(Aluminum lithium hydride)

L 14689-66 EWT(m)/EMP(t)/EMP(b) IJP(c) JD  
ACC NR: AP6005878 SOURCE CODE: UR/0075/65/020/010/1054/1058 43

AUTHOR: Terent'yev, A. P.; Larikova, G. G.; Bondarevskaya, Ye. A.; Pravidlo, G. Ye.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Lithium aluminum <sup>21</sup>hydride in analysis. Report No. 2. Determination of lithium aluminum hydride content

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 10, 1965, 1054-1058

TOPIC TAGS: hydride, lithium compound, aluminum compound, volumetric analysis

ABSTRACT: A previously described technique for determining active hydrogen in organic substances by means of  $\text{LiAlH}_4$  was used to check the lithium aluminum hydride content of ether solutions and the composition of solid  $\text{LiAlH}_4$ . A weighed sample was decomposed with ethyl alcohol, and the hydrogen evolved was driven with the vapor of the boiling ether into an azotometer filled with a 1:1 water-ethanol mixture, which absorbed the ether vapor. From the azotometer, the hydrogen was transferred into a eudiometer for volume measurement. Analysis of three samples of 100%  $\text{LiAlH}_4$

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ACC NR: AP6005878

showed that the error does not exceed 1%, and the results are in good agreement with the end hydrogen analysis. The method can be used for the analysis of sodium aluminum hydride and other hydrides. Orig. art. has: 4 figures, 3 tables.

SUB CODE: 07/ SUBM DATE: 03Oct64/ ORIG REF: 005/ OTH REF: 009

BVK  
Card 2/2

BAYMAKOV, A.Yu.; VERNER, B.F.; LARIKOVA, M.G.; DMITRIYEVA, N.K.

Refining tin from admixtures by the method of zonal smelting.  
TSvet. met. 29 no.8:51-58 Ag '56. (MLRA 9:10)

(Tin--Metallurgy)



S/724/61/000/000/004/020

**AUTHORS:** Loktionova, N. A., Rastvorova, N. M., Bereslavtseva, O. P.,  
Larikova, M. I., Stroganov, G. B.

**TITLE:** A New heat-treatment procedure for the AL19 alloy to maintain  
dimensional stability of castings.

**SOURCE:** Liteynnye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, i  
i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander  
and M. B. Al'tman. Moscow, Oborongiz, 1961, 36-42.

**TEXT:** The paper describes the laboratory development and industrial testing  
of a new heat-treatment procedure for AL19 parts of complex configuration. The  
procedure maintains a good stability of the geometric dimensions of the part  
throughout the course of the heat treatment. The laboratory investigation consisted  
essentially of the quenching of AL19 castings in water at differing temperatures (T).  
The cast specimens had a variable-section annular shape. They were quenched in a  
horizontal attitude. Artificial (accelerated) aging was performed. The specimens  
were placed into a furnace at 300°C, whereupon the T was raised to 535±5°. After  
9-hour soaking, the T was raised to 545±5°, with additional 7-hr holding. After  
quenching in water at varying T up to 96°, some of the specimens were aged at 175°  
for 3 hrs. It was found that: (1) For cross-sectional thicknesses up to 75x60 mm,

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A New heat-treatment procedure for the AL19....

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the AL19 alloy is practically insensitive to a reduction in the rate of cooling upon quench. The mechanical properties of the castings in the freshly quenched state, tested at room T, were practically invariable with an increase in water T from 45 to 96°, whereas in aged specimens tensile strength and relative elongation were somewhat reduced thereby. The mechanical properties at 250°C (short-term tests) were practically invariable with an increase in quench-water T up to 96° and were also independent of the type of heat treatment; (2) the total corrosional stability of the AL19 alloy quenched in water is practically the same with quench-water T of 45 and 96°, both in the freshly quenched state and after artificially accelerated aging; (3) the quenching of odd-shaped large castings in boiling water produces so insignificant a warping of the castings, that virtually no straightening is required after heat treatment. The adoption of quenching in boiling water for large odd-shaped castings has provided a cardinal solution of the problem of warpage, has reduced the amount of labor required, and has increased the quality of parts made of AL19 alloy; (4) quenching in boiling water does not require any additional major equipment and does not alter in any way the procedural schedule of the production line. Quenching in boiling water can be done with the utilization of ordinary vats and requires only a simple addition of equipment in which the water is heated by means of live steam. There are 2 figures, 4 tables, and 1 Russian-language Soviet reference.

Card 2/2

✓  
YEGOROV, M.N.; LARIKOVA, V.I.

Complex inflation method of gastric function test in certain gastrointestinal diseases. Ter. arkh., Moskva 24 no.1:22-36 Jan-Feb 52.  
(CJML 21:4)

1. Professor for Yegorov. 2. Of the Therapeutic Sanitary Administration of the Kremlin (Head--P.I. Yegorov, Corresponding Member of the Academy of Medical Sciences USSR).

LARIKOVA, V.I.

YEGOROV, M.N., professor; LARIKOVA, V.I. (Moskva)

Use of various anticoagulants in myocardial infarction and in  
stenocardia. Klin. med. 32 no.5:45-51 My '54. (MLRA 7:7)

(ANGINA PECTORIS, therapy,

\*anticoagulants)

(MYOCARDIAL INFARCT, therapy,

\*anticoagulants)

(ANTICOAGULANTS, therapeutic use,

\*angina pectoris & myocarial infarct)

*LARIKOW L.*  
BULGARIA/Solid State Physics - Mechanical Properties of Crystals and Polycrystalline Substances E-10

Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 10745

Author : Larikow L.

Inst : Sofia University, Sofia, Bulgarin

Title : On the Problem of Anomalous Softening of Lead-Tin Alloys at Room Temperature

Orig Pub : Dokl. Bolg. AN, 1957, 10, No 1, 65-68

Abstract : An investigation was made of the change in hardness in natural aging of lead-tin alloys containing one to 19% tin. It was established that there exists an initial aging stage in which the greater the percentage of tin, the faster the increase in hardness. By fixation of the state reached at room temperature through rapid quenching to -60°C, it was possible to show the presence of an initial strengthening in natural aging even in alloys with 15 to 19% tin. Thanks to the rapid aging in the initial stage at room temperature, this strengthening has previously escaped observation. An explanation is offered for the considerable discrepancy between the literature

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LARIKOW L.

BULGARIA/Solid State Physics - Phase Transitions in Solids

E-6

Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 10638

Author : Larikow L.

Inst : Sofia University, Sofia, Bulgaria

Title : Mechanism of Natural Aging of Lead-Tin Alloys

Orig Pub : Dokl. Bolg. AN, 1957, 10, No 1, 69-72

Abstract : The course of the process of aging of lead-tin alloys is divided into four stages: 1. The latent period, characterized only by a slight reduction in the electric resistivity. 2. The period of spontaneous decay of the solid solution, characterized by a fast increase in the hardness, a sharp decrease in the electric resistivity, and a change in the lattice parameter in accordance with the scheme of the heterophase decay. 3. The period of coagulation of the new phase in the relaxation of the principal phase in the lattice, a phase characterized by simultaneous rather weak decrease of both the hardness and electric resistivity with the lattice parameter remaining constant. 4. A period of recrystallization in softening; during this period the drop in hardness and

Card : 1/2

LARILOVA, E. and PARFENOVA E. - U.R.S.S.

"Les transformations géochimiques de certains éléments de la nature"

report submitted for the 6th Intl. Congress of Soil Science,  
Paris, France  
28 August 1956



LARIN, A., kandidat khimicheskikh nauk.

New detergents. Prom.koop. no.1:25-26 Ja '57.  
(Washing powders)

(MIRA 10:4)

LARIN, A.

"First photographys of the other side of the moon." Reviewed  
by A.Larin. Sov.foto 20 no.1:22 Ja '60.

(Lunar probes) (Moon--Photographs, Maps, etc.) (MIRA 13:5)

LARIN, A.; PLOTNIKOV, A.

Letters to the editor. Voen. znan. 37 no.12:20 D '61.

(MIRA 14:11)

1. Predsedatel' Kominternovskogo raykoma Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu, g. Voronezh (for Larin).
2. Starshiy instruktor oblastnogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu, g. Kuybyshev (for Plotnikov).  
(Voronezh--Military education)  
(Kuybyshev--Military education)

LARIN, A.

Road to the world of beauty. Prof.-tekh. ohr. 20 no.5:6-7 My '63.  
(MIRA 16:7)

1. Direktor bobruyskogo professional'no-tekhnicheskogo uchilishcha  
No.15, Belorusskaya SSR.  
(Aesthetics--Study and teaching)

14(5)

SOV/93-58-12-9/16

AUTHOR: Shekhtman, Yu.M., Kuranov, I.F., and Larin, A.A.

TITLE: Filtration in the Surrounding Zone of the Well During the Hydraulic Fracturing of Formations (Fil'tratsiya v prizaboynoy zone skvazhiny pri gidravlicheskom razryve plasta)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 12, pp 40-45 (USSR)

ABSTRACT: Yu. M. Shekhtman [Ref 1] presented a method for calculating the fluid influx into a sand-filled vertical fracture. The present article aims to verify and improve this method of calculation so as to facilitate its practical application. The authors take a vertical fracture which is symmetrically located in relation to the well and apply to it Shekhtman's formula for the condition at the end of the fracture. Assuming that  $a = -c$  and  $b = c$  they present the formula as follows

$$\frac{k'}{2} h \sqrt{x} = \begin{cases} \pm 2 \int_{-c}^x \sqrt{y} dx + q(-c) & (-c \leq x \leq 0, y = \pm 0), \\ \pm 2 \int_c^x \sqrt{y} dx - q(c) & (0 \leq x \leq c, y = \pm 0), \end{cases}$$
 where  $k'$  is the permeability factor of the sand filler,  $k$  - the permeability factor of the formation,  $h$  - the width of the fracture,  $2c$  - the length of the fracture,  $q(-c)$  and  $q(c)$  - the fluid consumption at the ends of the fracture per unit of its height,  $\sqrt{x}$  - the composite filtration rate along the  $ox$  axis, and  $\sqrt{y}$  - the composite filtration rate at the  $oy$  axis.

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Filtration in the Surrounding Zone (Cont.)

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Next, they present Shekhtman's values of  $\sqrt{x}$  and  $\sqrt{y}$  as follows  $\sqrt{x} = \frac{1}{c \sin \theta}$ ,  
 $\sum_{n=2,4,6...} n A_n \sin n\theta$ , and  $\sqrt{y} = \frac{Q}{2\pi c \sin \theta} - \frac{1}{c \sin \theta} \sum_{n=2,4,6...} n A_n \cos n\theta$ , where  $Q$  is

the fluid consumption of the fracture per unit of its height,  $\theta$  - the auxiliary variable, and  $A_n$  - the coefficients which are to be determined. In order to determine the coefficients  $A_n$  Shekhtman's formula for the condition at the end of the fracture is converted and presented as follows

$$\sqrt{x} = \begin{cases} \mp 2a \int_{-c}^x \sqrt{y} dx + \sqrt{x}(-c) & (-c \leq x \leq 0, y = \pm 0), \\ \mp 2a \int_y^x dx + \sqrt{x}(c) & (0 \leq x \leq c, y = \pm 0), \end{cases}$$

where  $a = \frac{1}{2} \sqrt{\frac{c}{\pi}}$ ,  $\sqrt{x}(-c) = aq$

(c). By substituting Shekhtman's values of  $\sqrt{x}$  and  $\sqrt{y}$  in the last formula, integrating, replacing the variable  $x$  by  $c \cos \theta$  and  $dx$  by  $-c \sin \theta d\theta$ , and introducing the indices

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Filtration in the Surrounding Zone (Cont.)

$$T = \frac{1}{ac} = \frac{k'}{k} \frac{h}{e}, \quad m = \frac{h}{2}, \quad a_{2m} = \frac{A_{2m}}{Q}, \quad \text{and} \quad 2T \sum_{m=1}^{\infty} m^2 a_{2m} = U(T),$$

We obtain

$$\left\{ \begin{aligned} & \left[ U(T) + \frac{\theta}{2\pi} - \sum_{m=1}^{\infty} a_{2m} \sin 2m\theta \right] \sin \theta, \quad (0 \leq \theta \leq \frac{\pi}{2}); \\ & \left[ U(T) - \frac{\theta}{2\pi} + \sum_{m=1}^{\infty} a_{2m} \sin 2m\theta \right] \sqrt{\frac{\sinh \theta}{2}}, \quad (-\frac{\pi}{2} \leq \theta \leq 0); \\ & \left[ -U(T) - \frac{1}{2} + \frac{\theta}{2\pi} - \sum_{m=1}^{\infty} a_{2m} \sin 2m\theta \right] \sin \theta, \quad (\frac{\pi}{2} \leq \theta \leq \pi); \\ & \left[ -U(T) - \frac{1}{2} - \frac{\theta}{2\pi} + \sum_{m=1}^{\infty} a_{2m} \sin 2m\theta \right] \sin \theta, \quad (-\pi \leq \theta \leq -\frac{\pi}{2}). \end{aligned} \right.$$

Card 3/5



# Filtration in the Surrounding

SOV/93-58-12-9/16

In these equations the coefficients  $a_{2m}$  which depend only on  $T$  are the unknown, and it is difficult to determine their values directly from the last equation. By expanding into Fourier series both sides of the last equation and comparing the coefficients at trigonometric functions of an angle with the same multiplicity we obtain an infinite system of equations of the following form

$$-I a_{2l} + \frac{32}{\pi} \sum_{m=1}^{\infty} m F(m+l) F(m-l) a_{2m} = \frac{8}{\pi^2} [F(l)]^2, \text{ where } l \text{ is}$$

the number of the equation ( $l = 1, 2, 3, \dots$ ); and  $F(x) = \frac{1}{4x^2 - 1}$ .

. Assuming that the series in the equation agrees with regard to  $l$  the number of equations is limited to  $l = 1, 2, \dots, s$  and to the same number of unknown  $a_{2m}$  ( $m = 1, 2, \dots, s$ ). The system of equations thus obtained is linear and can be solved without too much difficulty (Fig.2). Knowing the value of the coefficients  $a_{2m}$  it is possible to calculate the velocity potential, pressure, and fluid consumption with the aid of Shekhtman's formulas. The results were verified experimentally on a radical unit consisting of a test chamber (Fig 3), vacuum chamber, and measuring instruments (Fig 4). The experimental results are presented graphically by Figs 5-7. It is suggested that the suffusion and silting of the filler sand can be eliminated by selecting sand of suitable properties [Ref 2]. The authors conclude that the theoretical data are in good

Card 4/5

Filtration in the Surrounding Zone (Cont.)

SOV/93-58-12-9/16

agreement with the experimental data and since the calculations were carried out with absolute values good agreement can also be expected in the theoretical and field data if the formation is uniform and the remaining properties are known. Therefore, this method for calculating the influx of fluid into vertical fractures is recommended for practical purposes. If the dimensions of the fractures are not measured directly, they can be obtained from the studies of S.A. Khristianovich, G. I. Barenblatt, and Yu. N. Zheltov [Ref 3-6]. The auxiliary graphs  $a_{2m}(T)$  presented in this article simplify the calculation process so that it can be carried out in 1-2 hours. There are 7 figures and 6 Soviet references.

Card 5/5

1. LARIN, A .

2. USSR (600)

4. Harbors

7. Over-all mechanization of loading and unloading operations in sea ports, Mor. flot 13 No. 2, 1953

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

LARIN, A., inzhener

Ways of improving the technical conditions of machinery in port  
transshipment installations. Mor.flot 15 no.10:11-13 0'55.  
(Harbors) (MLRA 8:12)

*LARIN, A.*

VOROBTSOV, Ye.; LARIN, A.

PTS-4 hold leader. Mor.flot 17 no.8:10-13 Ag '57. (MIRA 10:10)

1.Glavnyy konstruktor Tsentral'nege proyektno-konstruktorskogo  
byuro No.4. 2.Starshiy inzhener Upravleniya portovogo khozyaystva  
i mekhanizatsii Ministerstva morskogo flota SSSR.  
(Loading and unloading)

LARIN, Aleksandr Aleksandrovich; TARASOV, Fedor Kondrat'yevich;  
~~VOROBTSOV, Ye.S., red.~~; YAROVA, L.V., red.izd-va; SARAYEV,  
B.A., tekhn.red.

[New unloading machinery for sea ports] Novye peregruzochnye  
mashiny dlia morskikh portov. Moskva, Izd-vo "Morskoi transport,"  
1959. 90 p. (MIRA 13:3)  
(Loading and unloading) (Harbors)

LARIN, A.

Facing local organizations. Voen. znan. 40 no.8:29-30 Ag '64.

(MIRA 17:11)

1. Zamestitel' predsedatelya Voronezhskogo oblastnogo komiteta  
Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii, aviatsii  
i flotu.

LARIN, A.K., inzhener.

Improving the construction of a circuit breaker valve through  
which oil samples are taken. Elek.sta. 25 no.8:57 Ag '54.  
(Electric circuit breakers) (MIRA 7:9)



LARIN, A.K., inzh.

Sectional unit (grapnel block). Energetik 10 no.4:31-32 Ap  
'62. (MIRA 15:4)  
(Electric lines--Overhead)

LARIN, A.K., inzh.; SOROKA, I.F., inzh.

Restoration of the cylinder housings of air compressors. Energetik  
12 no.2:18 F '64. (MIRA 17:4)

LARIN, A.N., inzh.

Using modern dispatching systems in construction and industry. Mont. 1  
spets.rab.v stroi. 22 no.11:19-22 N'60. (MIRA 13:10)

1. Treest Promsnyaz'montash Ministroya RSFSR.  
(Radio in industry) (Industrial television)

ACCESSION NR: AP4029466

S/0130/64/000/004/0031/0034

AUTHOR: Larin, A. N.

TITLE: Production adoption of a billet from stainless and high-alloy steel ingots

SOURCE: Metallurg, no. 4, 1964, 31-34

TOPIC TAGS: stainless steel, high alloy steel

ABSTRACT: The author described two principle rolling mills at which the stated adoption took place. He showed the modifications that were necessary for this adoption. Results were presented in tables and figures. After modifications were completed, the rolling of the first lot of billets showed that preliminary heating of the rollers by the rolling of 5-10 of the adjustment slabs of carbonized steel was necessary for stable operation of the mill and more precise adjustment of the stands. 6000 to 7500 tons of billets were rolled on one group of 3 rollers per run. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Zlatoustovskiy metallurgichesky zavod (Zlatoustovsk Metallurgical Works)

Card 1/2

LARIN, A.S.

Technological improvement of sheet bar rolling. Metallurg 10  
no.8:28 Ag '65. (MIRA 28:8)

1. Starshiy master stana 750 Zlatoustovskogo metallurgicheskogo  
zavoda.

LARIN, A. P.

Warehouses

Notes on Ya. M. Zetserov's article "New types of storage for raw materials and fuel with railroad cars unloading without the use of a gantry"; Ogneupory 17 no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952. Unclassified.

1. LARIN, A. P., Eng.
2. USSR 600
4. Remote Control
7. On G. N. Bruk's article "Device for remote control of the loading of bunkers."  
Ogneupory, 17, No. 12, 1952.

9. Monthly list of Russian Acquisitions, Library of Congress, April 1953, Uncl.

LARIN, A.P., inzh.

Mechanizing operations for the storage of finished products.  
Ogneupory 18 no.3:111-116 '53. (MIRA 11:10)  
(Refractory materials--Storage) (Material handling)



LARIN, A. P.  
1930. Mixing-units for semi-dry grogged bodies.—A. P. LARIN (*Ogneupor*, 22, 138, 1957). In Russian. Results of industrial tests on edge-runner mills, batch-type roller mixers and double-shaft continuous mixers, and of laboratory tests with a ball mill, rollers, and Z-type mixer, to determine the effect of mixing-pressure and number of compressions on quality of mixing. Mixing in a ball mill and in roller mixers was better than in the double-shaft mixer. The Z-type mixer increases the porosity of the body. Ball mill-type mixers are briefly discussed and recommendations for improving their performance are made. With double-shaft mixers mixing should be counter-current and the mixer should be situated next to the press. The mullers of edge-runner mills must not be raised and should be weighted as much as possible; the mixer should not be over-loaded. A relatively efficient type of roller mixer is described and illustrated. (1 fig., 6 tables.)

*Larin, A.P.*  
~~LARIN, A.P.~~

Fully automatic plant for the production of regular *grog* firebricks.  
Ogneupory 22 no.11:497-503 '57. (MIRA 11:1)

1. Leningradskiy institut ogneuporov.  
(Refractories industry) (Automatic control)

15(5)  
AUTHOR:

Larin, A. P.

TITLE:

Press Parameters and Requirements of a Press for Semi-Dry Pressing (O nekotorykh parametrah pressovaniya i trebovaniyakh k pressu polusukhogo pressovaniya)

PERIODICAL:

Ogneupory, 1958, Nr 11, pp 504-508 (USSR)

ABSTRACT:

Apart from the amount of pressure applied, the following factors are of influence upon the quality of the product: pressing speed and pressure time, elastic expansion of the product, overpressing, pressure release by vacuum, vibration and other technical economic factors. Pressing speed and pressure time. Kogon discovered in experiments that retarded pressing speed improves the physico-mechanical characteristics of the finished products. Balandin noted that a pressing speed of 0,34-2,8 mm/min did not have any effect upon the quality of the products. Berezhnoy proved that the pressure time has an improving effect upon the quality of the products. Elastic expansion. Ogarkov, Mamkin, and Bai'shin assume that this occurs because of a return movement of particles. Ivanov,

Card 1/3

807/131-58-11-A/9

Press Parameters and Requirements of a Press for Semi-Dry Pressing

Chuprinin, and Minskiy stated that the elastic expansion of the products depends on the technological parameters.

Over-pressing. This means a stratification of the products in form of cracks in the unfinished or burned products, respectively. Vaganov, Gvozdev, Baysogolov, Galkin, Ivanov, Chuprinin, Minskiy, Ogarkov, Mamykin, and Berezhnoy were concerned with this problem; the majority of them assuming that air was pressed into the material. Experiments made by Polyak (Ref 1) show that the formation of cracks is the result of an elastic after-effect, that can be prevented by a number of measures.

Pressure release in vacuum. Karklit and Timofeyev conducted experiments in the Semilakskiy ognepornyy zavod (Semilakskiy Plant for Refractory **Materials**) and obtained some positive results, which were, however, not so important as to justify a considerably more complicated pressing process.

Vibration while pressing. The quality of the products can be improved by this method, but the output decreases in the same time.

Technical-economic characteristics of the performance of toggle-joint presses. In the years 1952 to 1956 the VNIlstroy mash

Card 2/3

SOV/131-58-11-4/9

Press Parameters and Requirements of a Press for Semi-Dry Pressing

examined the presses in brick industries. The performance of these presses is shown in the table. The worst characteristics are those of the Press SM-143. Conclusions: SM-143 presses must be modernized or replaced by new ones, because they do not meet the technological requirements; a draft of reconstructing the press should be worked out by the Khar'kovskiy zavod "Krasnyy Oktyabr'" (Khar'kovskiy Plant "Krasnyy Oktyabr'") in conjunction with the Institutes of Refractory Products. There are 1 table and 21 references, 19 of which are Soviet.

ASSOCIATION: Leningradskiy institut ogneporov (Leningrad Institute of Refractory **Materials**).

Card 3/3

LARIN, A.P.; LOSEV, S.A.; SLOUSHCH, V.G.

Determining compression forces on a cranked lever press. Ogneupory  
25 no.1:14-16 '60. (MIRA 13:6)

1. Vsesoyuznyy institut ogneuporov.  
(Refractories industry--Equipment and supplies)  
(Strain gauges)

BERNSHTEYN, R.S.; IARIN, A.P.; FINKEL'MAN, S.G.

Main trends in the over-all mechanization and automation of the manufacture of refractory products. Ogneupory 25 no.10:455-459 '60.

(MIRA 13:10)

1. Vsesoyuznyy institut ogneuporov.  
(Refractories industry--Equipment and supplies)  
(Automatic control)

LARIN, A.P.; UL'FSKIY, I.G.

Refractories plants of the Czechoslovakian Socialist Republic.  
Ogneupory, 26 no.8:386-389 '61. (MIRA 14:9)

1. Vsesoyuznyy institut ogneuporov.  
(Czechoslovakia--Refractories industry--Equipment and supplies)



GAVRISH, D.I.; LARIN, A.P.; STROFILOV, A.A.

In Austrian refractory plants. Ogneupory 27 no.8:381-386  
'62. (MIRA 15:9)

1. Gosplan SSSR (for Gavrish). 2. Vsesoyuznyy institut  
ogneuporov (for Larin, Strofilov).  
(Austria--Refractory materials)

LARIN, A.P.; LOSEV, S.A.

Performance of "model 115" centrifugal pug mills. Ogneupory  
27 no.8:363-364 '62. (MIRA 15:9)

1. Vsesoyuznyy institut ogneuporov.  
(Mixing machinery) (Refractory materials)

LARIN, A.P.

Types of equipment represented at the Leipzig Fair. Ogneupory  
27 no.12:574 '62. (MIRA 15:12)

1. Vsesoyuznyy institut ogneuporov.  
(Leipzig—Exhibitions)  
(Germany, East—Industrial equipment)

LARIN, A.P.

Stabilizing the feeding of fireclay to rotary grog-burning  
kilns. Ogneupory 28 no.5:236 '63. (MIRA 16:6)

1. Vsesoyuznyy institut ogneuporov.  
(Refractory materials)  
(Kilns, Rotary--Equipment and supplies)

LARIN, A.P., inzh.

Prospective nomenclature of presses for the manufacture of simple  
shape refractories. Trudy Inst. ogneup. no.34:219-231 '63.  
(MIRA 17:10)

ITSKOVICH, G.M.; SAUTKIN, N.I.; LARIN, A.V.

Speed of solidification and depth of the liquid phase in a continuous ingot of low-carbon rimmed steel. Metallurg 8 no.5:10-12 My '63. (MIRA 16:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

(Continuous casting) (Crystallization)

L 21135-65 ENT(m)/EMP(b)/EWA(a)/EMP(t) TJP(c)/AFWL/SSD/RAE(c) HH/JD  
ACCESSION NR: AP4045652 S/0133/64/000/009/0788/0795

AUTHOR: Itskovich, G. M.; Sautkin, N. I.; Larin, A. V.

TITLE: Chemical inhomogeneity of a continuously cast low carbon rimmed and semi killed steel ingot

SOURCE: <sup>24</sup>Stal', no. 9, 1964, 788-795

TOPIC TAGS: rimmed steel, semikilled steel, continuous casting, inhomogeneity, manganese, phosphorous, boron, vanadium

ABSTRACT: The chemical inhomogeneity of continuously cast rimmed and semi-killed steel ingots reduced by 46 to 66% was studied in the light of their suitability for deep-drawn cold-rolled sheet. The segregation of Mn and P was negligible over the whole length of the continuously cast ingot because crystallization conditions are invariable in a stable process. During continuous casting, the rimming period is shortened by the growing ferrostatic pressure as the ingot is being stripped while the crystallization rate is accelerated. Sulfur segregation of 77 to 132% was identified in ingots stripped at a rate of 0.6 m/min and only 48 to 94%  
Card 1/2

L 21135-65

ACCESSION NR: AP4045652

6  
with stripping at 0.7 m/min. Analogous to ingot teeming, segregation is more abundant as the rate of oxidation, temperature and the concentration of a given element are increased. However, unlike ingot teeming, an increased pouring rate lowers segregation. Continuously cast metal produces cold-rolled sheet with homogeneous mechanical properties along the entire length of the ingot. Vanadium and boron additions to nonaging rimmed steel further lower the chemical inhomogeneity which attains the level of semi-killed steel. Negligible segregation over the whole length of a continuously cast rimmed steel 08Fkp specimen makes the entire ingot suitable for employment in the production of deep-drawn cold-rolled steel sheet. T. A. Izmanova, N. D. Shepelenko, V. K. Chervyakov, N. G. Moreyn and A. M. Pamurzina participated in the investigation. Orig. art. has: 5 figures

ASSOCIATION: TsNIChM

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NR REF SOV: 007

OTHER: 003

Card 2/2



BELASH, F.N.; KOVAL'CHUK, Kh.U.; LARIN, A.Ya.; PUGINA, O.V.

Using alkyl aryl sulfonate in the flotation of iron oxide.  
Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch. 1 tekhn.inform.  
no.6:3-5 '62. (MIRA 15:7)  
(Flotation) (Iron oxides) (Sulfonic acids)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS																																																																																									
PROCESSER AND PROPERTIES INDEX																																																																																																			
<div style="float: right; font-size: 2em; margin-right: 20px;">72</div> <div style="float: left; font-size: 2em; margin-left: 20px;">ca</div> <p>The investigation and use of polymerization products of cracked gasolines. A. A. Buchling. <i>Nefteyma Khimichesko 28, No. 6, 87 (1935)</i>. Polymerization products were sepd. by vacuum distn. from cracked gasoline treated in the vapor phase with <math>ZnCl_2</math> from unrefined cracked residues and from the heavier fraction obtained in the pyrolysis of petroleum. The polymers were of solid consistency and were found to be suitable softeners for rubber (permitting a thorough vulcanization), good varnish and paint substitutes, and high-grade elec. insulating material. The expts. are described in great detail.</p> <p style="text-align: right;">A. A. Buchling</p>																																																																																																			
<div style="float: right;">8-27-35</div> <div style="float: left;"> <p>ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>BOOKS 27MB12V</p> <p>BOOKS 27MB12V</p> <p>BOOKS 27MB12V</p> </div>																																																																																																			
<div style="float: right;">8-27-35</div> <div style="float: left;"> <p>BOOKS 27MB12V</p> <p>BOOKS 27MB12V</p> <p>BOOKS 27MB12V</p> </div>																																																																																																			

LARIN, A. Ya.

Mbr., Institute of Mineral Fuels, Academy of Science

"Cracking of Heavy Petroleum Products Over Incandescent Surface," Iz. Ak. Nauk  
SSSR, Otdel, Tekh. Nauk, 1943.

A 4681, BR-52059019

CA

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The cracking of heavy petroleum products over heated surfaces. A. Ya. Lavin. *Bull. Acad. Sci. U.R.S.S., Class. Sci. Math.* 1946, 42, 1. Cracking was effected over spirals of W, Mo, Pt, Fe, Ni, nichrome, nickel silver, and constantan electrically heated to 800-1000°. The spirals, 4 mm. in diam., were made from 1 m. of 0.5-0.8 mm. wire. The temp. was measured with a nichrome-constantan thermocouple welded to the middle of the spiral. In cracking of paraffin on a nichrome heating coil, increasing the current strength from 20 to 35 amp. increased the yield of gas from 68 to 80%, decreased the quantity of the liquid product formed from 31 to 19%, increased the content of olefins in the gas from 45 to 78 vol. %, and decreased the content of paraffin hydrocarbons from 25 to 8%. The content of H<sub>2</sub> was 6-8% in all expts. Coke formed was 0.5-1.0%, based on the starting material. Cracking with constantan, nickel silver, Ni, and Fe resulted in a considerable coke formation, which caused a rapid decrease in the yield of gas and disintegration of the coils. W, Mo, and Pt coils gave high yields of gas, based on the elec. current used; the gas was high in unsatd. hydrocarbons (with W coils, up to 600 g. of paraffin was decompd. per kw.-hr. of elec. energy). The gaseous products were up to 80% of

of the starting material, and contained up to 78% of unsatd. hydrocarbons. Mo had a smaller cracking effect and greater thermal resistance and formed less coke than W coils. Pt was more resistant than W to heat; it decompd. 350 g. of paraffin per kw.-hr., compared with 400 g. decompd. by W. The content of olefins in the gas was up to 78%. The presence of carboids in mazut interferes with its decompn. on heated coils. The yield of gas and the content of olefins in the gas obtained in the cracking of mazut freed of carboids and asphaltens were lower than those obtained in the cracking of paraffin. Cracking of oil distillates over heated coils yielded a gas of approx. the same compn. as that obtained from paraffin. The yields of gas per unit of elec. energy used were lower the higher the content in the raw material of compds. poor in H. Oil distillate contg. naphthenes yielded half as much gas per kw.-hr. as did paraffin. Oil distillate contg. up to 21% of aromatic compds. yielded only approx. 1/4 of the amt. obtained from paraffin. The yields of gas from mazut were still lower and varied greatly, depending on the content of resin and carboids. W. R. Heun

Inst. Mineral Fuels, A.S. USSR

ASB-5LA PETROLEUM LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSING AND PROPERTY INDEX																			
<p>3015. CRACKING OF FUEL OILS OVER ALUMINO SILICATE CATALYST. Larin A Ya (Bull acad sci U.R.S.S, CI sci tech, 1944, 724-728; J inst petrol 1945, 31, 207A). Laboratory cracking experiments at 300-350°C. (at atmospheric pressure) showed that the new type of aluminosilicate catalyst employed had considerable activity at these comparatively low temperatures. Catalyst was generated by streaming and air blowing at 450-475°C; activity was still very marked after 37 cycles. General action of the catalyst is of a similar nature to that of <math>AlCl_3</math>. Cracking of various fuels (SO at 20°C, 0.900-0.930, IBP 220-300°C) yielded up to 80% of cracked distillate. Average gasoline yields were, 150°C endpoing (O.N. with 3 ml TE/kg = 89) 15%; 200°C end point 26%. Iodine values (Marosches) of the cracked gasolines were .7-29).</p>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>10000 111 011 001</p>										<p>10000 111 011 001</p>									
<p>10000 111 011 001</p>										<p>10000 111 011 001</p>									

113. CONVERSION OF NORMAL PARAFFINS TO HIGH-OCTANE GASOLINE. Larin, A. Y., Orochko, D. L. and Frost, A. V. (Neftyanoe Khoz., 1946, 24, (12), 21-6; Chem. Abstr., 1947, 41, 6594). Data available in the literature on the catalytic cracking of paraffinic and naphthenic stocks (individual hydrocarbons or gas oils) by various known processes are tabulated and discussed for possible use in the processing of distillates from Devonian crude oils. The latter appear to be adapted for the manufacture of butadiene by fluid-type catalytic cracking followed by conversion of the cracked gases.

C. A.

113. CONVERSION OF NORMAL PARAFFINS TO HIGH-OCTANE GASOLINE. Larin, A. Y., Orochko, D. L. and Frost, A. V. (Neftyanoe Khoz., 1946, 24, (12), 21-6; Chem. Abstr., 1947, 41, 6594). Data available in the literature on the catalytic cracking of paraffinic and naphthenic stocks (individual hydrocarbons or gas oils) by various known processes are tabulated and discussed for possible use in the processing of distillates from Devonian crude oils. The latter appear to be adapted for the manufacture of butadiene by fluid-type catalytic cracking followed by conversion of the cracked gases.

C. A.

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p><b>1028. LOW-TEMPERATURE DECOMPOSITION OF GAS OIL IN PRESENCE OF ALUMINOSILICATE CATALYST.</b> Larin, A. Ya. (Compt. Rend. Acad. Sci. U.R.S.S., 1946, 52, 239-240; Chem. Abstr. 1946, 41, 2229).</p> <p>The catalytic action of aluminosilicate, specially prepared from natural minerals, on the decomposition of hydrocarbons was determined at temperatures as low as 200°, by using a Baku gas oil with a distillation range of 198° to 365°. At a decomposition temperature of 200°, approximately 5% of the product boiled below 150° and 15% below 200°. At a decomposition temperature of 300 - 400°, the maximum catalytic activity was displayed, with 18% of the product boiling below 150° and 35% below 200°. These experiments indicate that under natural conditions heavy hydrocarbons may give rise to light hydrocarbons as a result of the catalytic action of aluminosilicates or clay.</p>																			
<p>ASB-ILA METALLURGICAL LITERATURE CLASSIFICATION</p>																			

1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH ORDERS	
<p>Conversion of acetone over active aluminosilicates.  A. Va. Larine and A. V. Frost. <i>Compt. rend. acad. sci. U.R.S.S.</i> 84: 407-10(1940) (in French).-- Treating acetone over active aluminosilicates at 170-200° produces HAc and isobutylene. The tests were made under atm. pressure for 4 hrs., with active clay of Ascona as well as artificial aluminosilicate (cf. Frost, <i>C.A.</i> 37, 5300P). Probable intermediates in the reaction are <i>tert</i>-BuOAc and Me<sub>2</sub>C=CHCOMe.  Mildred P. Putnam</p>		10			
<p>ASAC-SEA METALLURGICAL LITERATURE CLASSIFICATION</p>					



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**B**

**Transformation of Acetone Over Alumino-Silicates.**  
A. Ia. Larin and A. V. Frost. *Reports of the Academy of Sciences of U.S.S.R.*, v. 54, Nov. 11, 1946, p. 411-414. (In Russian.)

At temperatures 170° to 260°C., acetone rearranges into acetic acid and isobutylene.

LARIN, A. Ya. Cand. Chem. Sci.

Dissertation: "Reactions of Acetone and Other Ketones Over Active Aluminosilicates." Inst of Mineral Fuels, Acad Sci USSR, 13 Mar 47.

SO: Vechernyaya Moskva, Mar, 1947 (Project #17836)

LARIN, A. YA.

PA47T8

USSR/Chemistry - Ketones 1 Mar 1948  
Chemistry - Aluminosilicates, as Catalysts

"Transformation of Ketones by Active Aluminosili-  
cates," A. Ya. Larin, A. V. Frost, 32 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 7

Mesityl oxide, methylethyl ketone, pinacolin, cyclo-  
hexanon, acetophenone, and benzophenone studied with  
active aluminosilicate as catalyzer. Experiments  
conducted in the vapor phase with multiple circula-  
tion of the ketone through the catalyzer. Gives  
results of catalytic transformation of ketones in  
detail.

47T8

LARIN, A. Ya.

USSR :

Defoaming of salt solutions during coal beneficiation. B. I. Shmuk, A. Ya. Larin, and V. B. Shneerson (Inst. Fuel Minerals and Inst. Petroleum, Acad. Sci. U.S.S.R., Moscow). *Invent. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1955, No. 1, 135-40.—The causes of foam stability and means of defoaming were investigated. A defoaming agent DS, consisted of salts of aromatic sulfonacids, obtained by the sulfonation of aromatic hydrocarbons in the kerosene-gas oil petroleum fraction, of a general formula  $ArSO_3Me$ , where Ar and R are the aromatic and aliphatic radicals (the latter in the side chain). The salts investigated included the Na, Ca, Al, and  $NH_4$  salts, and the Na and  $NH_4$  salts were found to be the most effective. The optimum defoamer concn. for salt solns. was detd. by measuring the contact angle of the suspension medium with the coal.

W. M. Sternberg

62  
2

Larin, A. Ya.

(Use of) salts of aromatic sulfonic acids in crude oil production. M. A. Gelman, A. Ya. Larin, V. B. Shcherbakov and R. A. Fedotkin. *Trudy Inst. Khim. Akad. Nauk S.S.S.R.* 6, 159-84 (1955). The Russian detergents DS (I) are sulfonic acid esters,  $RArSO_3Me$ , which possess both washing and wetting characteristics. They dissolve easily in water, are easily adsorbed on the interface oil-aq. soln. or oil-rock, and appreciably reduce the interfacial tension. They are also effective in acid treatment of oil wells. Lab. tests showed that they are useful in secondary recovery by water-flooding.

B. Z. Kamleh

Jm

LPH

5000

LARIN, A. YA.

Depressing foam in beneficiation of coal. R. I. Shnyuk,  
M. A. Gelinan, and A. Ya. Larin, U.S.S.R. 103,011, June  
25, 1956. Salts of aromatic sulfonic acids derived from  
petroleum distillates are used to prevent the formation of  
stable foam in the beneficiation of coal in salt solns.  
M. Hosh...

4  
4E32

LARIN	A. Ya.
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**ПОЛУЧЕНИЕ АНИОНЫХ ПОВЕРХНОСТНО-АКТИВНЫХ  
ВЕЩЕСТВ ИЗ НЕФТИ, ПЕФЯНЫХ, БУРОУГОЛЬНЫХ,  
СЛАНЦЕВЫХ И ТОРОИНЫХ ДИСТИЛЛЯТОВ**

М. А. Голубов, А. Я. Норин

VIII Mendeleev Congress for General and Applied Chemistry in  
Section of Chemistry and Chemical Technology of Fuels,  
publ. by Acad. Sci. USSR, Moscow 1979

abstracts of reports scheduled to be presented at above mentioned congress,  
Moscow, 13 March 1979.

S/030/60/000/011/011/026  
B021/B056

AUTHOR: Larin, A. Ya., Candidate of Chemical Sciences

TITLE: Surface-active Substances From Petroleum Distillates

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 11, pp. 78-84

TEXT: The production of synthetic detergents has developed in the USSR in the course of recent years. The active agent of the detergent "Novost'" is obtained by direct oxidation of the soft paraffins according to the method developed by A. N. Bashkirov. Salts of the aromatic sulfo acids can be obtained more easily and at lower costs by the method developed by S. S. Nametkin from petroleum distillates. These surface-active substances were called by Nametkin "Soviet Detergent" ("detergent sovetskiy") or just shortly, ДС (DS). Trial lots of DS were produced by the Vtoroy moskovskiy neftemaslozavod (Second Moscow Petroleum Refinery) by sulfonation of petroleum distillates by sulfuric anhydrides according to the method developed by Petrov by means of H4K (NChK neutralized black contact). By using DS in ore mining as flotation agent, the technological characteristics of preparations are improved owing to the costs being reduced by 8 to 15

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Surface-active Substances From  
Petroleum Distillates

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times their previous amount compared to the hitherto usual foaming agents, which led to a considerable saving of expense. Testing the salts DS in agriculture by the Vsesoyuznyy institut udobreniya i agropochvovedeniya ВАСХНИЛ (All-Union Institute of Fertilizers and Soil Science of the VASKhNIL) led to an increase of profits. In spite of the satisfactory washing properties, DS could not be used as a detergent because of its dark color and specific odor. In 1955 the author recommended a method of obtaining products of the type DS in which the aforementioned shortcomings did not exist. Sulfonation is carried out by means of sulfuric anhydride gas at milder temperature conditions, and the sulfo acids are purified from resinous substances. The products obtained in this manner are called refined alkyl aryl sulfonates (RAS). Sample lots of these substances were produced in the Second Moscow Petroleum Refinery in 1957, sulfonation being carried out according to the scheme shown in Fig. 1. The scheme of producing RAS is presented in Fig. 2. The flocculation of calcite and surface tension of the solutions RAS-Na, which were obtained from gas oil of catalytic cracking, is shown in Fig. 3. After testing the aqueous solutions of RAS, the Vsesoyuznyy nauchno-issledovatel'skiy institut zhirovoy promyshlennosti (All-Union Scientific Research Institute of the

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Surface-active Substances From  
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Fat Industry) recommended using them in the production of non-fat detergents. The Moskovskiy mylovarennyy zavod (Moscow Soap Works) used it with good success. At the Institut gigiyeny truda i profzabolevaniy Akademii meditsinskikh nauk SSSR (Institute of Labor Hygiene and Occupational Diseases of the Academy of Medical Sciences USSR) attempts were made to deactivate radioactive contamination of various building materials, the best results being attained by RAS in form of iron salt. At the Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR) sodium salt RAS was used with good success for improving the wetting capacity of polypropylene by water. The Moskovskaya mekhanicheskaya prachechnaya No. 6 (Moscow Laundry No. 6) was able, by using RAS, to save considerable amounts of time. The "Lengiprogaz" (State Institute for the Design and Planning of Synthetic Liquid Fuel and Gas Establishments) worked out the draft of a special plant for the production of RAS on the basis of works experience; the costs of the active substance RAS can, in this case, be considerably reduced compared to the prices of the usual detergent. The plant is intended to be put into operation in 1961. There are 3 figures and 8 Soviet references.

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KAZAKOV, Ye. I.; LARIN, A. Ya.; VORONINA, T. B.; LYUBIMOVA, Z. V.;  
GOROSHKO, G. K.

Surface-active substances from peat tar hydrocarbons. Trudy  
IGI 17:157-168 '62. (MIRA 15:10)

(Surface-active agents) (Peat)

KAZAKOV, Ye. I.; LARIN, A. Ya.; VORONINA, T. B.; LYUBIMOVA, Z. V.;  
GOROSHKO, G. K.

Light oil of a mean temperature brown coal tar as a raw material  
for the production of surface-active substances. Trudy IGI 17:  
169-173 '62. (MIRA 15:10)

(Coal-tar products) (Surface-active agents)

LARIN, B.

LARIN, B.

Improved trade standards in the village. Sov. profsoyuzy 2  
no.6:39-42 Je '54. (MIRA 7:7)

1. Predsedatel' Orlovskogo obkoma profsoyusa rabotnikov potreb-  
kooperatsii.  
(Retail trade)

LARIN, B. A.

LARIN, B. A. -- "The Effect of Harvesting Conditions of Grain Cultures in Irrigated Agriculture on the System of Operation and the Power Economy of Combines." Min Higher Education USSR. Chelyabinsk Inst of the Mechanization and Electrification of Agriculture. Chelyabinsk, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

SOURCE Knizhnaya Letopis', No 6 1956

LARIN, B.A., kand. tekhn. nauk

Elements of the basic theory of geodetic phase range finders.  
Trudy TSNIIGAIK no.154:3-34 '63. (MIRA 16:9)  
(Range finders)

LARIN, B. A.

Larin, B. A. - "On superinvar measuring wires", Sbornik nauch.-tekhn. i priozvod. statey po geodezii, kartografii, topografii, aero"yemke i gravimetrii, Issue 21, 1948, p. 42-45.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).



LARIN, B. A.

"Some thermic properties of Invar Measuring Rods" (Section I)  
paper submitted at 11th General Assembly of International Union of Geodesy and  
Geophysics, 3-14 Sep 56, Toronto, Canada.

C-3,800, 146

LARIN, B.A.

PHASE I BOOK EXPLOITATION

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Akademiya nauk SSSR. Komitet po geodezii i geofizike

Mezhdunarodnaya assotsiatsiya geodezii; tezisy dokladov na XI General'noy assambleye Mezhdunarodnogo geodezicheskogo i geofizicheskogo soyuza (The International Association of Geodesy; Abstracts of the Reports at the XI General Assembly of the International Union of Geodesy and Geophysics) Moscow, Izd-vo AN SSSR, 1957. 63 p. 1,500 copies printed.

PURPOSE: The purpose of this booklet is the dissemination of abstracts of the reports presented by the Soviet members of the International Association of Geodesy at the XI General Assembly of the International Union of Geodesy and Geophysics.

COVERAGE: This booklet, with full English translation of the Russian text, published by The National Committee for Geodesy and

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The International Association of Geodesy (Cont.)

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Geophysics of the Academy of Sciences of the USSR presents abstracts of reports by the Soviet members of the International Association of Geodesy at the XI General Assembly of the International Union of Geodesy and Geophysics. No personalities are mentioned. There are no references.

TABLE OF  
CONTENTS:

Heyfets, M.Ye.

Quartz-metal Pendulum

5

The quartz-metal pendulum is well suited for precision work and in gravity observations at sea. It is stable, comparatively unsensitive to temperature changes and to magnetic fields and does not require an elaborate support system. Its shape, size and weight, do not differ from the Sturckrat pendulum. It consists of a fused quartz stem, invar head and a lenticularly-shaped brass bob. Each pendulum is subjected to rigorous tests for strength and temperature hysteresis; static and dynamic temperature coefficients and barometric

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The International Association of Geodesy (Cont.)

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coefficients after a lapse of years remain practically constant. The use of such a pendulum at first order stations, even under very adverse climatic conditions and transportation difficulties, is well justified.

Izotov, A.A. The Reference Ellipsoid and the Basic Geodetic Data Used in USSR

9

The reduction of triangulation to sea level and the subsequent development of it on the surface of the geoid introduce considerable distortions into the main geodetic framework. The method of projecting triangulation directly on the surface of the reference ellipsoid developed and adapted in USSR is free from such drawbacks. Krasovskiy's ellipsoid derived from measurements in USSR, W. Europe and USA offers a close enough figure of the Earth, applicable to the continents of the Northern hemisphere only.

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Larin, B. A. Thermal Properties of Invar Measuring Wires

12

Modern triangulation techniques require the highest degree of accuracy in measuring base lines. In the USSR, the commonly accepted 24 m. long invar or super-invar wires show little change in thermal coefficients with time, or thermal after-effects on the length of the wire. Invar wires can now be manufactured with temperature coefficients of equal value but of opposite sign.

Entin, I.I. Basis Systematic Errors in Precision Leveling

16

The systematic errors in precision leveling are vertical displacements of the markers and of the tripod, and changes in the angle between the line of sight and the bubble axis due to the effect of temperatures. Other errors caused by non-vertical position of the rods, etc. are noted, and means for correcting them are recommended. In precision leveling the computed systematic error is  $\pm 0.05$  mm per kilometer.

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The International Association of Geodesy (Cont.)

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Sinyagina, M. I. Preliminary Findings in the Study of Vertical Displacement of the Earth's Crust Through Repeat Leveling

There is a considerable number of repeat leveling traverses in the European part of the USSR, run to obtain a vertical control grid of the entire USSR. The western part of European USSR, circumscribed by the Baltic, Black and Azov seas, is more thoroughly covered by observations and as such was selected for the study of uplifts. The necessary material was selected, systematized and properly computed. To this study of 20,000 km of traverses, were added other geodetic data including oceanographic and geo-morphological material; 82% of all the traverses proved to be reliable. The recent rate of uplift is -5 to +10 mm per annum, determined to an accuracy of 2 mm per annum.

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The International Association of Geodesy (Cont.)

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Pellinen, L. P. The Effect of Refraction on Angular Measurements 2

The main source of systematic errors in triangulation work is lateral (horizontal) refraction. In observation during one night or day, the errors vary between  $\pm 0.5 - 0.7$ . Under unfavorable conditions there may appear other errors of the same order. The greatest of these is caused by refraction while measuring traverses in cities, when the line of sight passes close to and parallel to the wall of a large building. The accepted technique of triangulation in USSR and the adopted methods of adjustments minimize the effects of refraction.

Belyayev, N.A. A Photoelectric Device for Field Astronomical Measurements 26

The described photoelectric system designed to record the passage time of stars is attached to the AU 2/10 astronomical vertical instrument (engineer's transit) and does not increase substantially the weight or bulk of a field party's equipment; it is

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